

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 96/20864

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2521719 A	25-11-76	US 4116198 A	26-09-78
WO 9426228 A	24-11-94	AU 676329 B	06-03-97
		AU 6829694 A	12-12-94
		CA 2162395 A	24-11-94
		EP 0697841 A	28-02-96
		JP 9501328 T	10-02-97
US 5401272 A	28-03-95	US 5441498 A	15-08-95
WO 9534259 A	21-12-95	US 5562703 A	08-10-96
		AU 3137495 A	05-01-96

INTERNATIONAL SEARCH REPORT

Inter- national Application No

PCT/US 96/28864

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WO 95 34259 A (DESAI ASHVIN H) 21 December 1995</p> <p>see abstract; figure 17</p> <p>see page 8, line 22 - page 9, line 18</p> <p>see page 11, line 37 - page 13, line 14</p> <p>see page 17, line 15 - page 22, line 10</p> <p>-----</p>	21,27-40

Form PCT/ISA/210 (continuation of annex sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Inter national Application No
PCT/US 96/20864

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A61B17/39

According to International Patent Classification (IPC) or to both national classification and IPC.

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 25 21 719 A (DELMA ELEKTRO MED APP) 25 November 1976 see page 8, line 23 - page 9, line 20 see page 13, line 1 - line 28; figures 1,7,8 ---	1-20, 22-26
Y	WO 94 26228 A (THAPLIYAL & EGGERS ;EGGERS PHILIP E (US); THAPLIYAL HIRA V (US)) 24 November 1994 see abstract; figure 1 see page 17, line 3 - page 18, line 12 ---	1-20
X	US 5 401 272 A (PERKINS RODNEY C) 28 March 1995	21,27-40
Y	see abstract; figures see column 2, line 59 - column 4, line 35 ---	22-26
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "a" document member of the same patent family

Date of the actual completion of the international search

20 May 1997

Date of mailing of the international search report

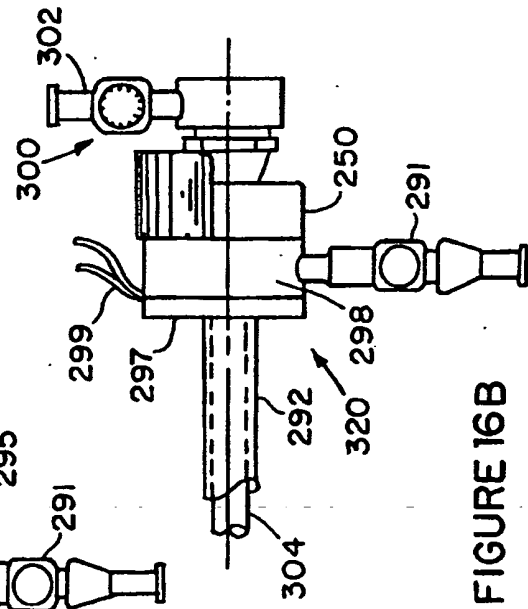
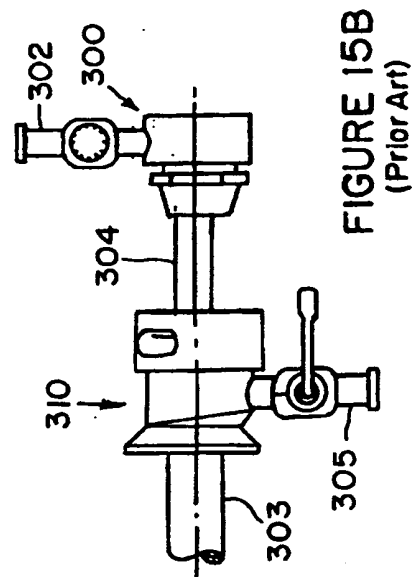
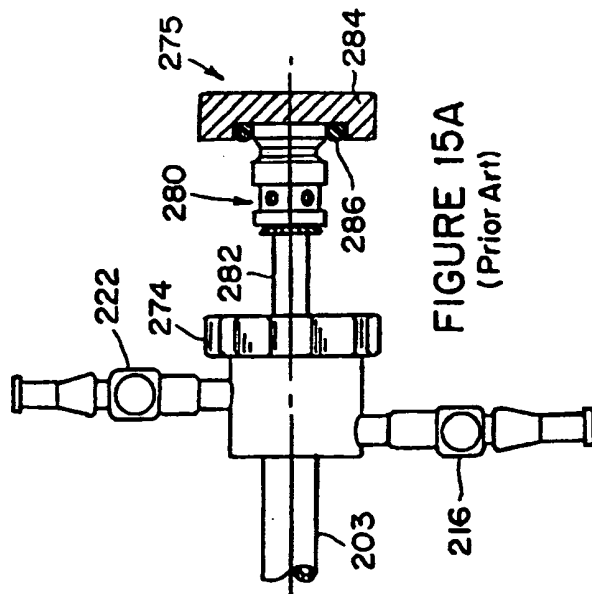
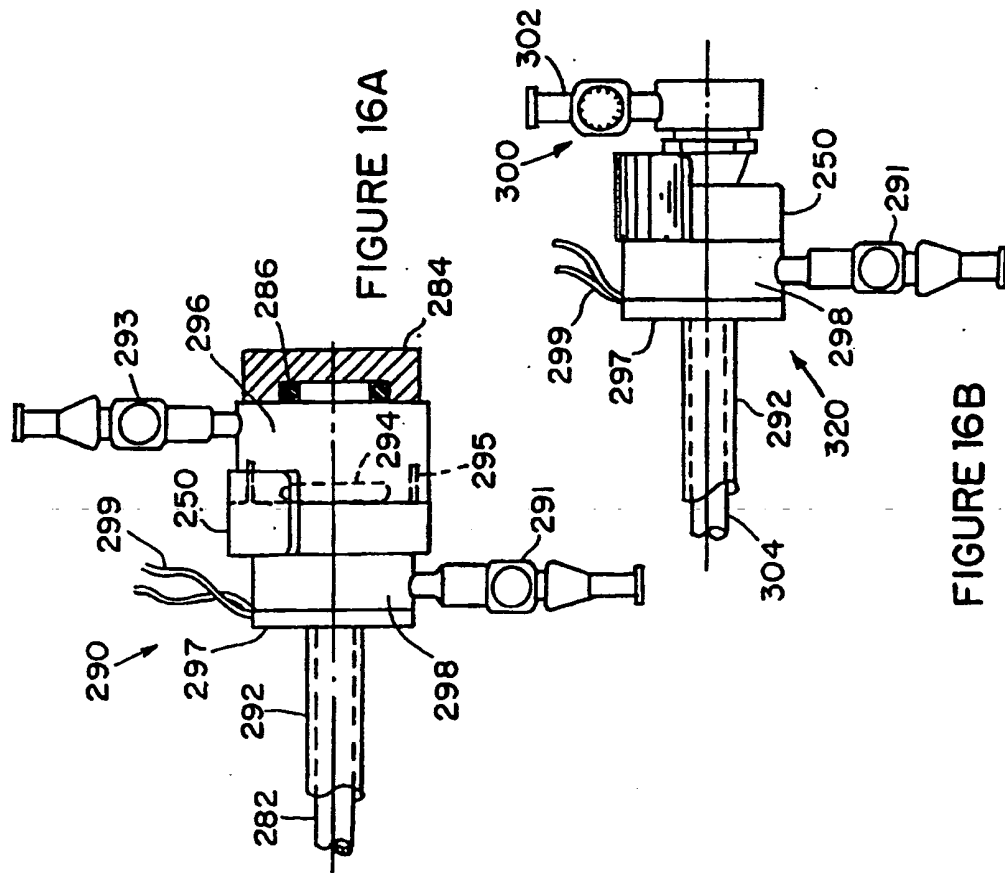
23.05.97

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+ 31-70) 340-3016

Authorized officer

Zeinstra, H



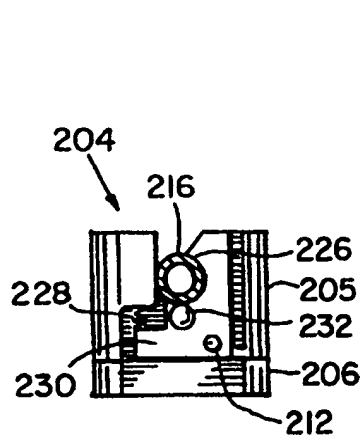


FIGURE 12

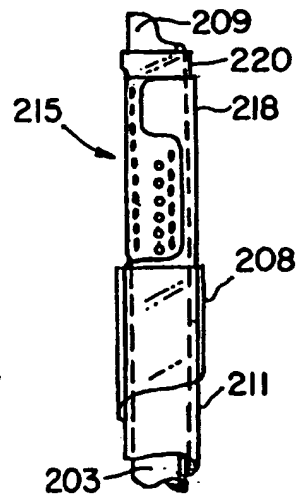


FIGURE 13A

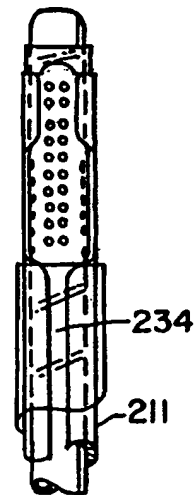


FIGURE 13B

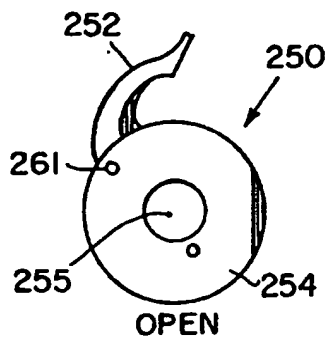


FIGURE 14A

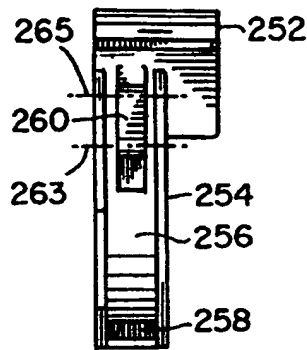


FIGURE 14C

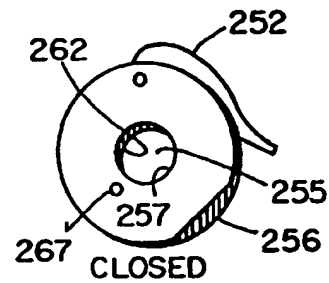


FIGURE 14B

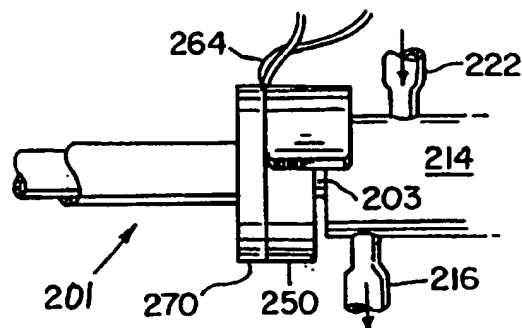
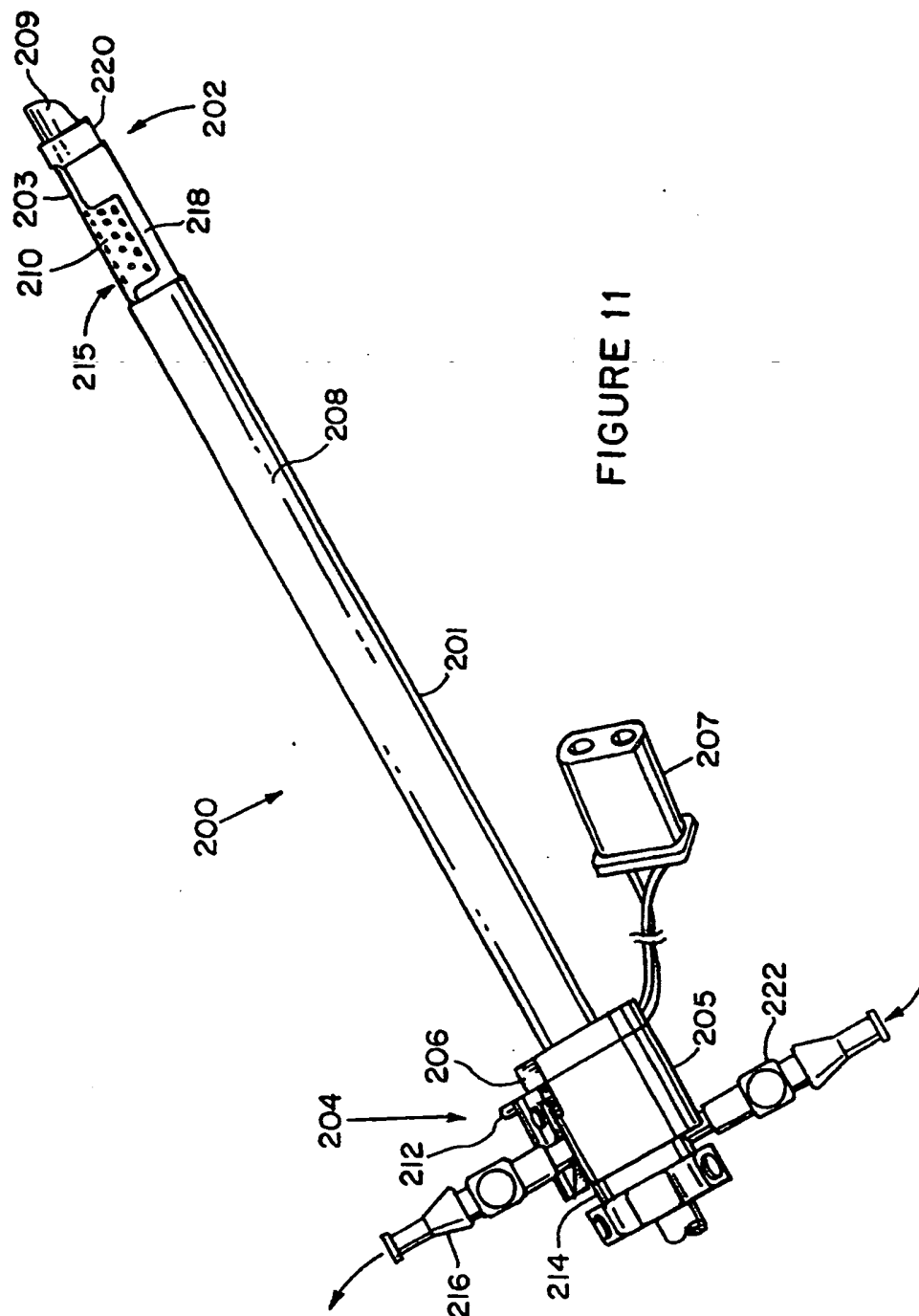


FIGURE 14D



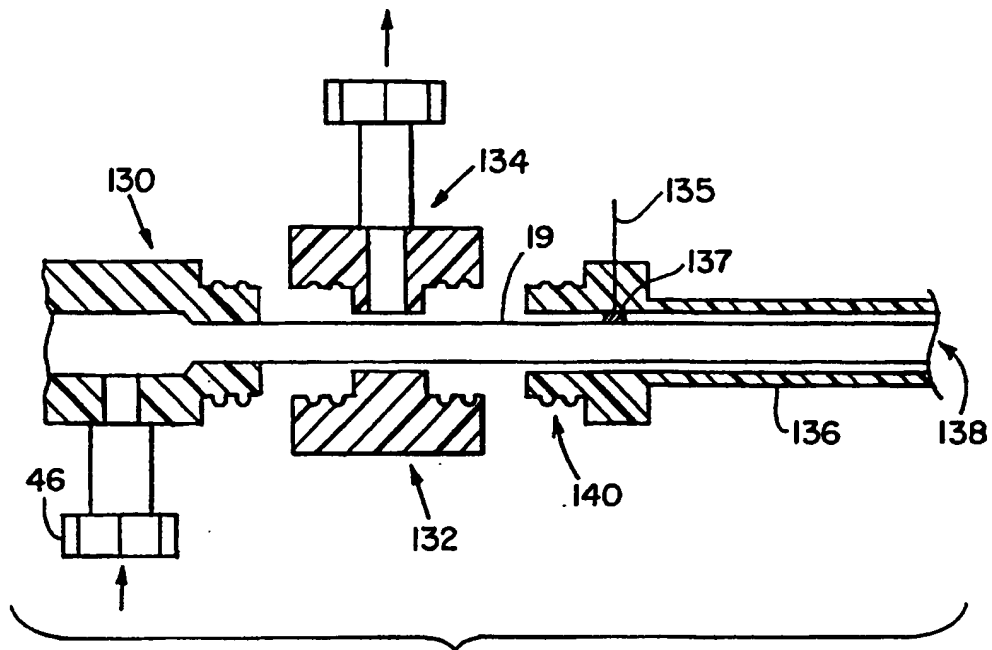


FIGURE 8

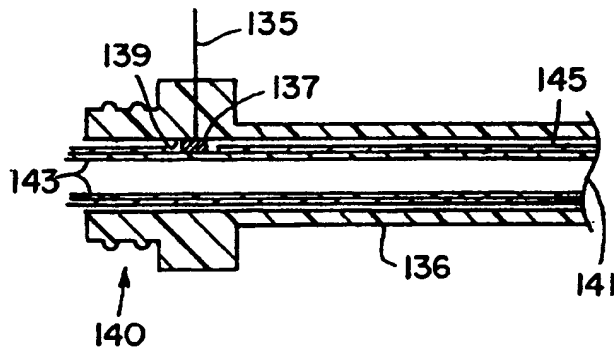


FIGURE 9

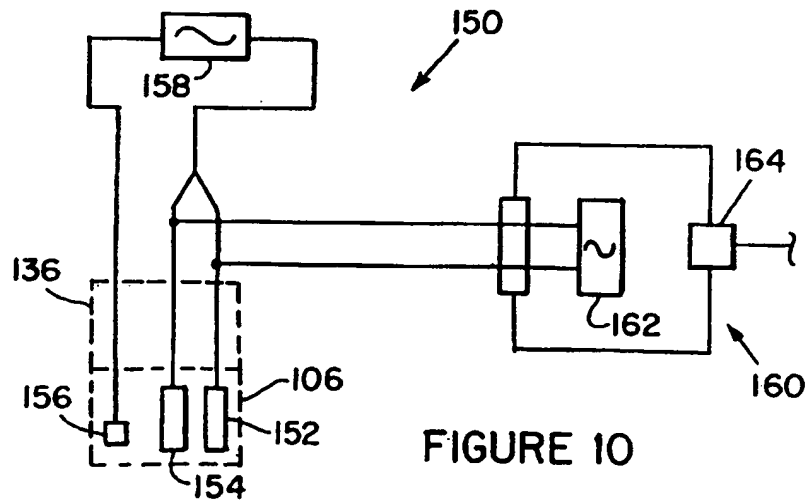


FIGURE 10

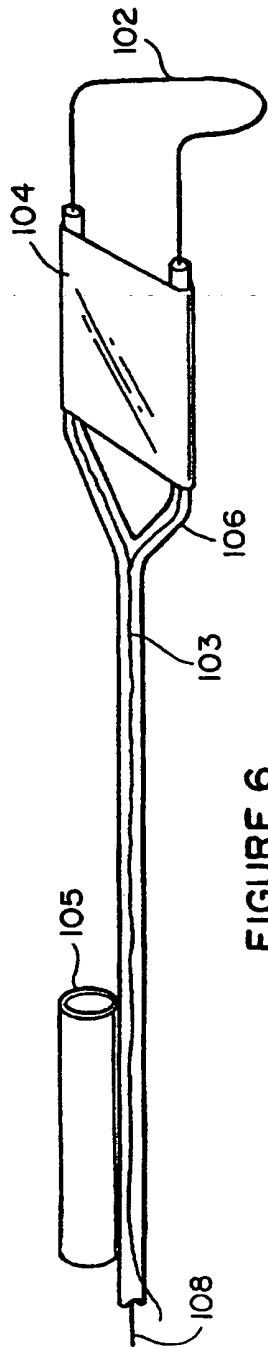


FIGURE 6

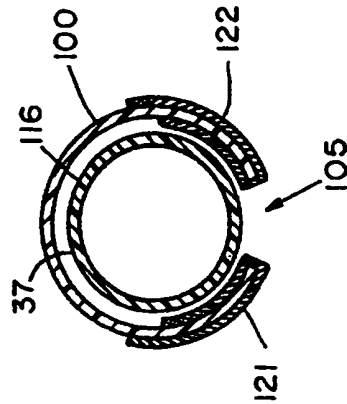


FIGURE 7B

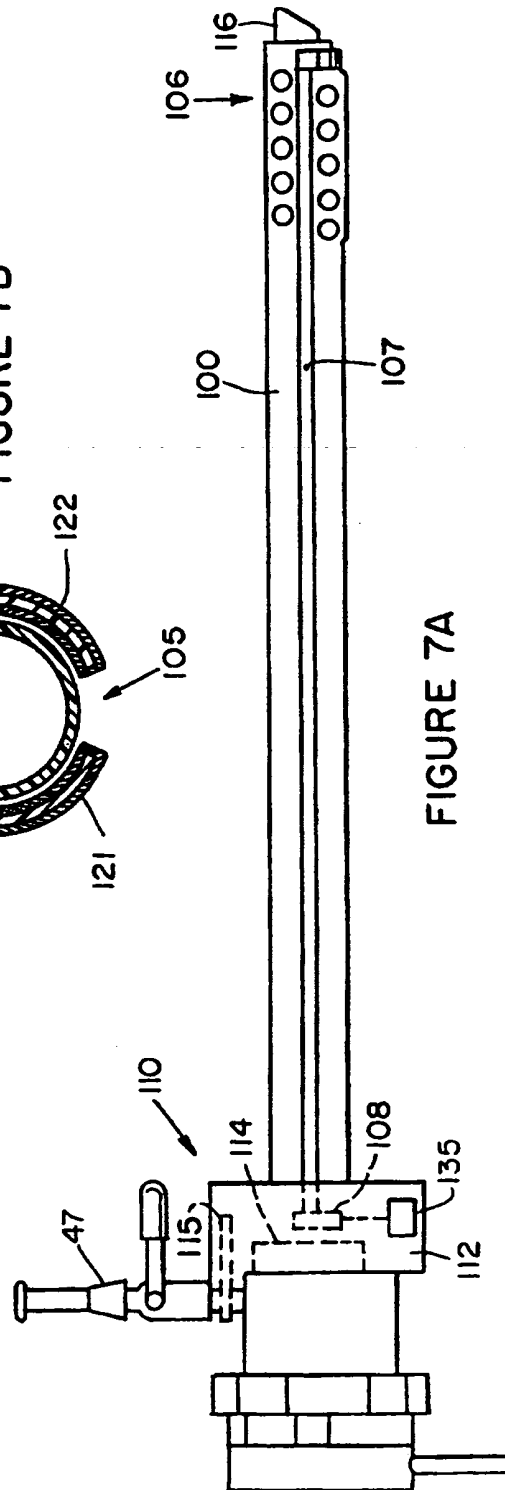


FIGURE 7A

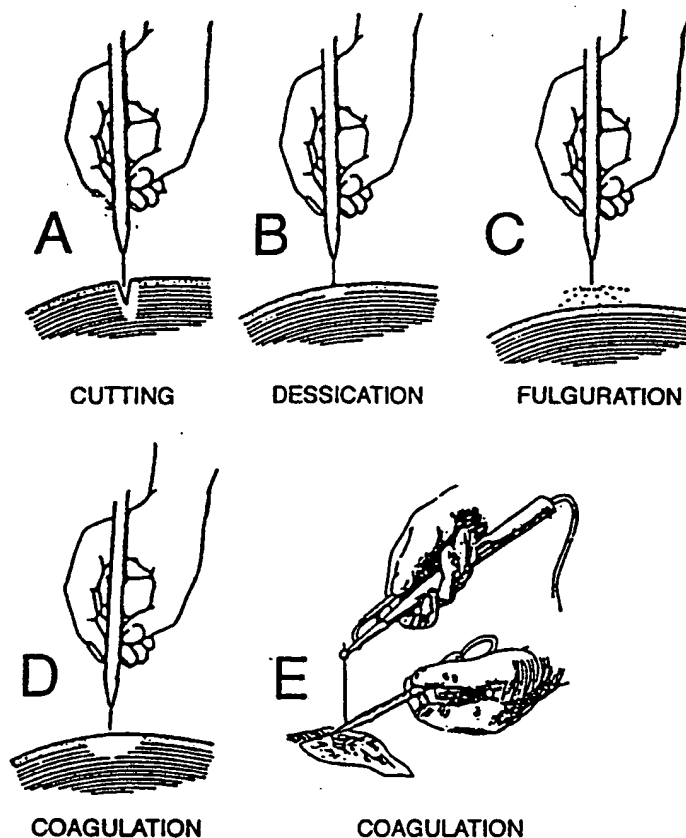


FIGURE 12 Tissue effects.

producing a scalpel-like cut; the permissible speed of cutting depends on the current intensity. However, the lips of the incision usually bleed and coagulation current is used to arrest the bleeding. In many ESUs, it is possible to combine (blend) cutting and coagulating current electrically so that coagulation accompanies cutting.

Honig (1975) has shown that the temperature at the tip of the electrode is high enough to boil tissue fluid, which causes the cells to burst. The arc represents a very localized source of heat so that the cutting is highly localized. In addition, the arc represents ionized gas (plasma), which has a low resistance. Therefore, as the cutting electrode is advanced, it is surrounded by steam and hot ionized gas which emits light.

DESSICATION

Desiccation (Figure 12B), i.e., drying, is produced by placing the tip of the probe in contact with the tissue and activating the ESU. Low current (of either type) can

an isolated-
iology 1974,

monopolar
dispersive
the patient
the patient

on the type
ch accidents
ill in use.

urrent of the
contact with
e vaporizes,

THIS PAGE BLANK (USPTO)